

# Results from the

# 2011 Missouri Youth Tobacco Survey



**Missouri Department of Health and Senior Services**  
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## ACKNOWLEDGEMENTS

### Results from the 2011 Missouri Youth Tobacco Survey

Special thanks to the middle and high school students that participated in the Missouri Youth Tobacco Survey and to the administrators, teachers and staff of the randomly selected schools for their assistance. This valuable information would not be available without their cooperation.

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The Missouri Youth Tobacco Survey is supported by cooperative agreement number 3U58DP001976 between the U.S. Centers for Disease Control and Prevention (CDC), Office on Smoking and Health and the Missouri Department of Health and Senior Services, Comprehensive Tobacco Control Program, **Victoria Fehrmann Warren**, MS, Program Coordinator.

Suggested Citation: Results from the 2011 Missouri Youth Tobacco Survey. Jefferson City, MO: Missouri Department of Health and Senior Services. Office of Epidemiology. December 2011.

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## Overview

The Missouri Youth Tobacco Survey (YTS) has been conducted by the Missouri Department of Health and Senior Services (DHSS) every odd-numbered spring since 2003. The survey is funded by the Missouri Comprehensive Tobacco Control Program through a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC).

All regular and charter public schools in Missouri containing grades 6-8 were included in the sampling frame for middle school, and those containing grades 9-12 were included in the sampling frame for high school. A two-stage cluster sample design was used to produce a separate representative sample of students for middle school and high school.

In the first-stage sampling, schools were randomly selected with probability proportional to the school enrollment size. In the second-stage, systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. All classes in the selected schools were included in the second-stage sampling frame. All students in the selected classes were eligible to participate in the survey. School and student participation are anonymous and confidential. Passive parental permission is utilized unless the school district requires active permission.

The response rate was calculated by multiplying school participation rate by student participation rate for middle schools and high schools. The response rate must be equal to or greater than 60 percent for data to be weighted to adjust for unequal probability selection of each student and to reduce bias by compensating for differing patterns of nonresponse. Sufficient responses for weighting the data have been obtained each year the YTS has been conducted. In 2011, 33 of 42 (78.6 percent) sampled middle schools participated with 1902 of 2156 (88.2 percent) sampled students completing usable questionnaires. Among high schools, 33 of 40 (82.5 percent) and 1555 of 1780 (87.4 percent) students participated. The overall response rate for middle schools was 69.3 percent and 72.1 percent for high schools.

This report summarizes key findings from the 2011 survey and includes results from previous surveys that demonstrate changes over time. To view a report of survey findings from 2003-2009, go to <http://health.mo.gov/data/yts/data.php>.

## 2011 Key Findings

- ✓ Lifetime tobacco use among middle and high school students continued to decline
- ✓ Lifetime cigarette smoking among middle and high school students continued to decline
- ✓ Current cigarette smoking among middle and high schools students continued a downward trend
- ✓ Smokeless tobacco use among high school males continued to increase
- ✓ Twice as many middle and high school students that smoke lived with someone that smokes than did students that had never smoked
- ✓ The percentage of middle and high school students that saw or heard anti-cigarette smoking ads in past 30 days continued to decline significantly

- ✓ The percentage of middle and high school students exposed to secondhand smoke in past seven days declined significantly
- ✓ The percentage of high school students with jobs working in places that allow smoking declined significantly
- ✓ The percentage of high school students who think indoor workplaces should be smoke-free increased significantly

## **Strategies for Reducing Tobacco Use among Missouri Youth**

Results from the 2011 Missouri Youth Tobacco Survey (YTS) showed continued progress in reducing tobacco use and exposure to secondhand smoke that was first reported in “Missouri Youth Tobacco Survey 2003-2009.” To continue the progress, the following evidence-based strategies should be fully implemented.

### **➤ Promote quitting by adults and youth**

The YTS results that follow show significant differences between youth that have never smoked cigarettes and those that are current smokers with regard to influences to smoke. One such influence is living with someone that smokes. In 2011, 80 percent of middle school smokers lived with someone that smoked compared to 36 percent of never smokers. Among high school smokers, 62 percent lived with someone that smoked compared to 32 percent of never smokers. Missouri’s adult smoking prevalence in 2010 was 21.1 percent and was among the highest of all states.<sup>1</sup> To continue reducing smoking among young people, efforts must also continue that will decrease adult smoking.

### **➤ Increase the price of tobacco products**

Increasing the price of tobacco products is one of the most effective methods of decreasing use among both adults and youth.<sup>2</sup> Missouri’s state tax of 17 cents on a package of cigarettes is the lowest of all states.<sup>3</sup> The 2011 YTS revealed that the most utilized method of obtaining cigarettes by high school students under the age of 18 that smoke was to give money to someone else to buy them. Increasing the cost would make cigarettes less affordable for youth.

### **➤ Create tobacco-free environments**

Creating smoke-free environments not only reduces exposure to secondhand smoke, but has also been shown to contribute to less smoking initiation by youth due to less modeling of the behavior by adults. According to a Massachusetts study, youth in communities with strict smoking bans were 40 percent less likely to initiate smoking than youth in communities without bans.<sup>4</sup> Efforts to increase the number of smoke-free workplaces in Missouri have resulted in less exposure to secondhand smoke for the public and workers. Since 2003, over 25 Missouri municipalities have enacted smoke-free workplace ordinances.<sup>5</sup> The 2011 YTS revealed that significantly fewer high school students with jobs were working in places that allowed smoking than in 2007. These efforts should increase, and involve youth in advocating for tobacco-free environments such as programs described in a report by the Center for Tobacco Policy Research.<sup>6</sup>

➤ **Decrease social acceptability of tobacco**

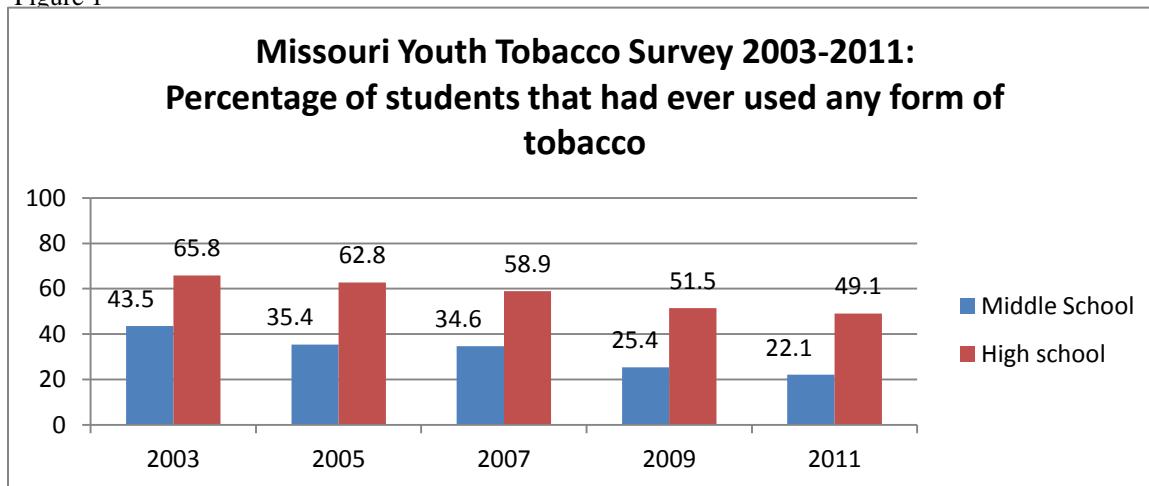
The 2011 YTS showed continued decline in the percentage of middle and high school student that saw or heard anti-smoking ads in the past 30 days, while the percentage that saw tobacco ads remained consistently high at over 80 percent. Anti-smoking advertising, in combination with other interventions, has been shown to reduce tobacco use initiation among youth.<sup>7</sup> Efforts should be made to secure funding to support strong anti-tobacco advertising that counters tobacco industry advertising.

## Results from the 2011 Missouri Youth Tobacco Survey

### Tobacco Use

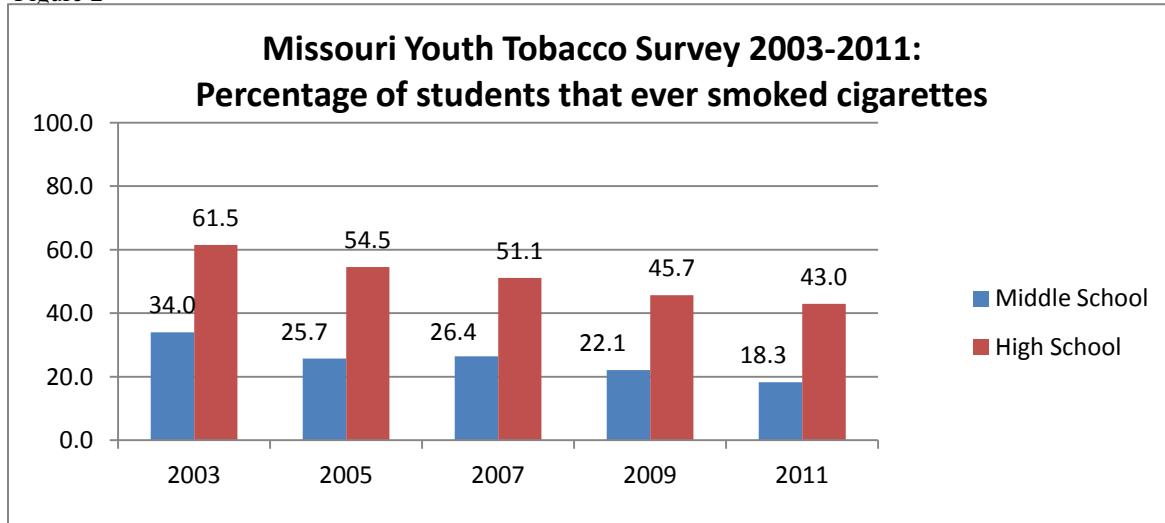
The percentage of middle and high school students that had ever used any form of tobacco declined significantly from 2003 to 2011 (Figure 1).

Figure 1



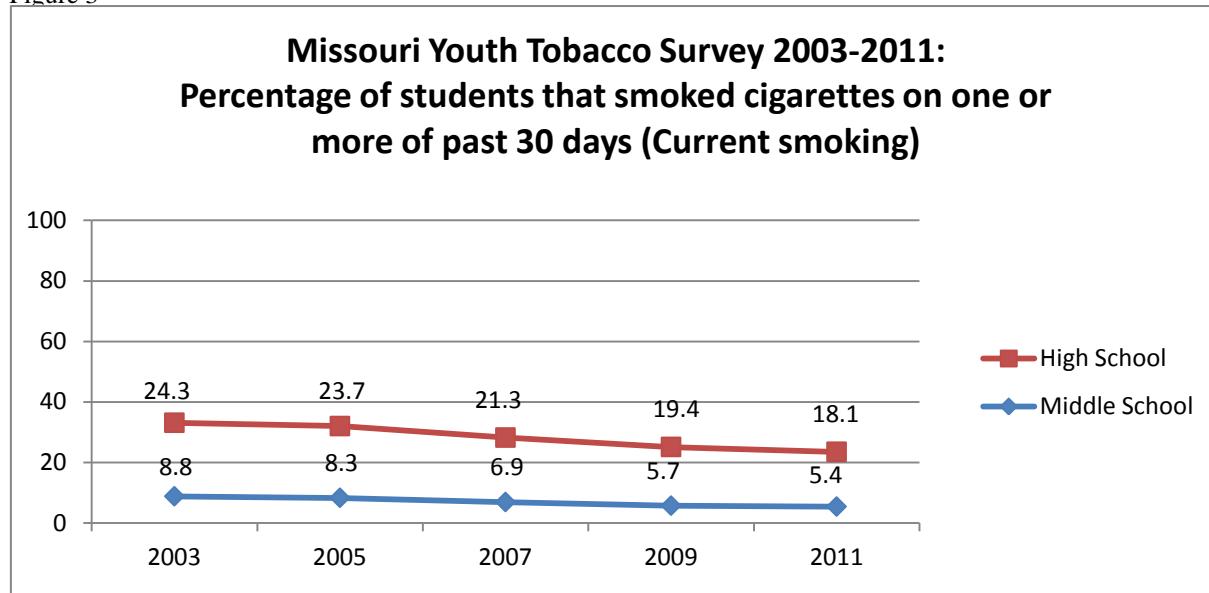
The percentage of middle and high school students that had ever smoked cigarettes declined significantly from 2003 to 2011 (Figure 2).

Figure 2



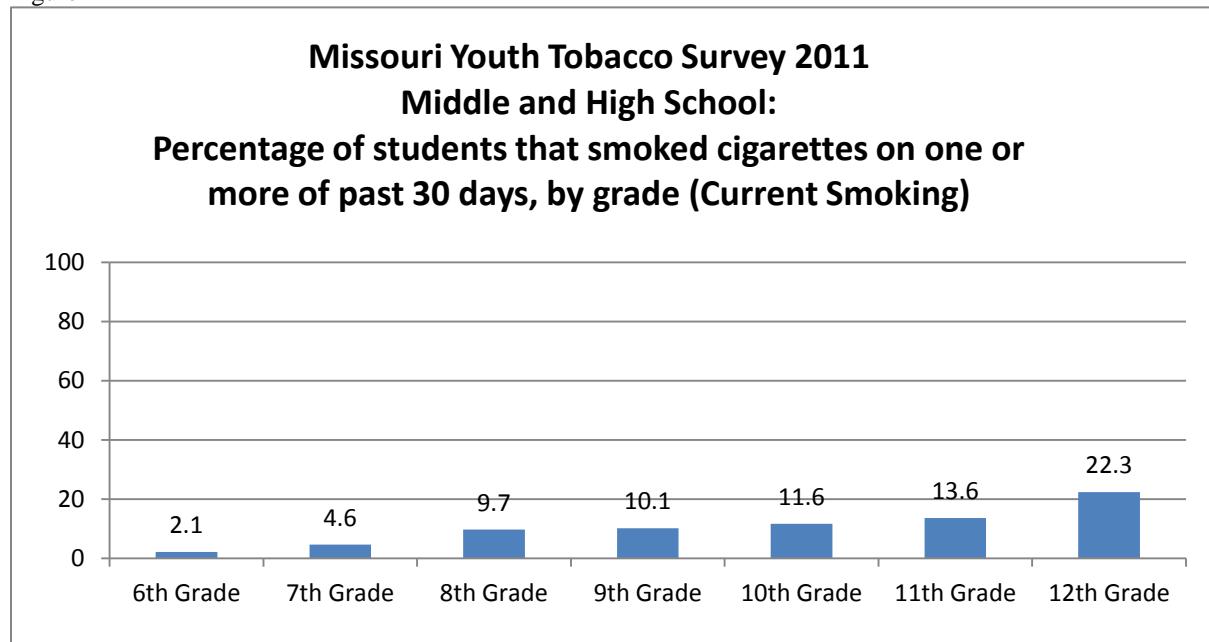
Current cigarette use among middle and high school students continued a downward trend over the period of 2003 to 2011 (Figure 3). There was a statistically significant average annual decline of 6.6 percent in the smoking prevalence among middle school students and 4.0 percent average annual decline among high school students.

Figure 3



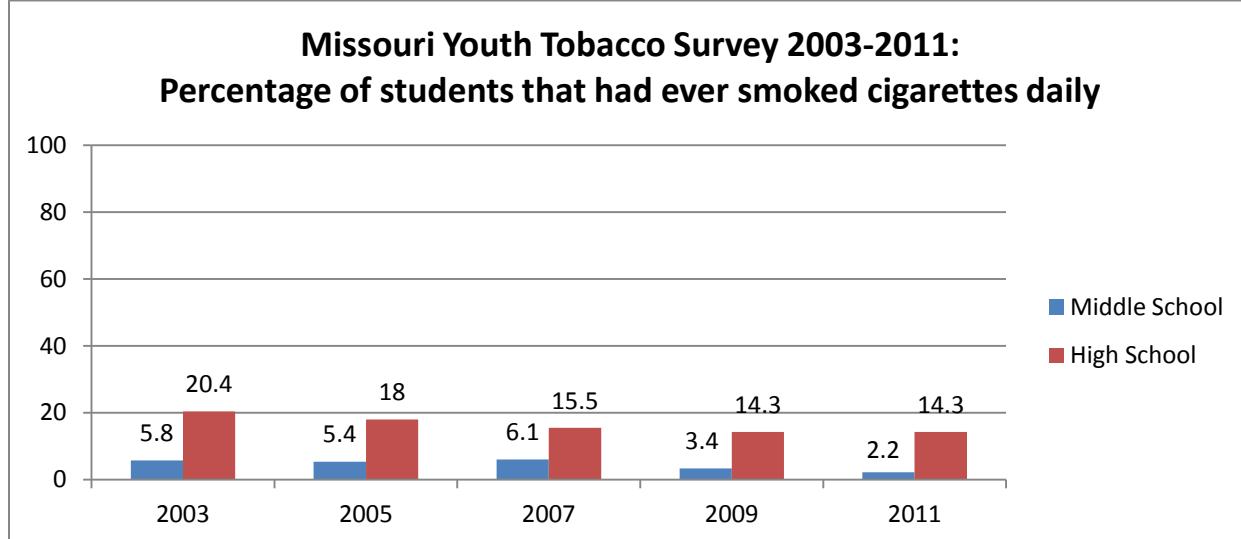
In 2011, current cigarette smoking increased from 2.1 percent among 6<sup>th</sup> grade students to 22.3 percent of 12<sup>th</sup> grade students (Figure 4).

Figure 4



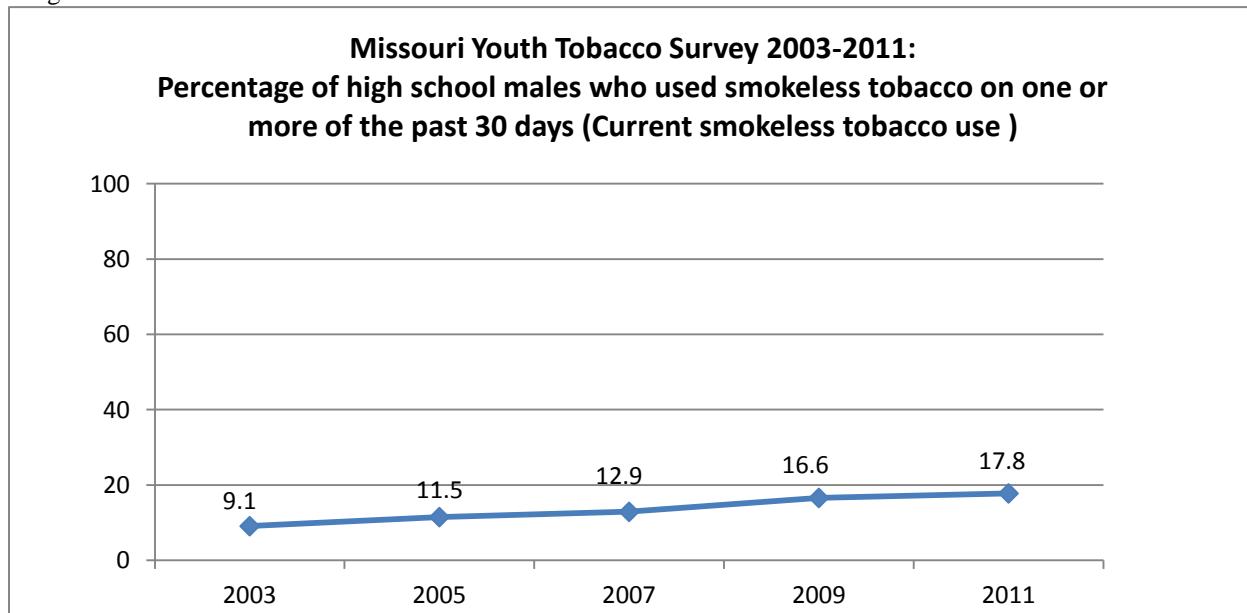
The percentage of middle school students that had ever smoked cigarettes daily declined significantly from 5.8 percent in 2003 to 2.2 percent in 2011 (Figure 5).

Figure 5



Smokeless tobacco use among high school males increased significantly from 9.1 percent in 2003 to 17.8 percent in 2011 (Figure 6).

Figure 6



## Quit attempts and assistance

More than half of middle and high school current smokers tried to quit each year of the survey (Figure 7). However, few had participated in a program to help them quit, including five or less percent in 2011 (Figure 8).

Figure 7

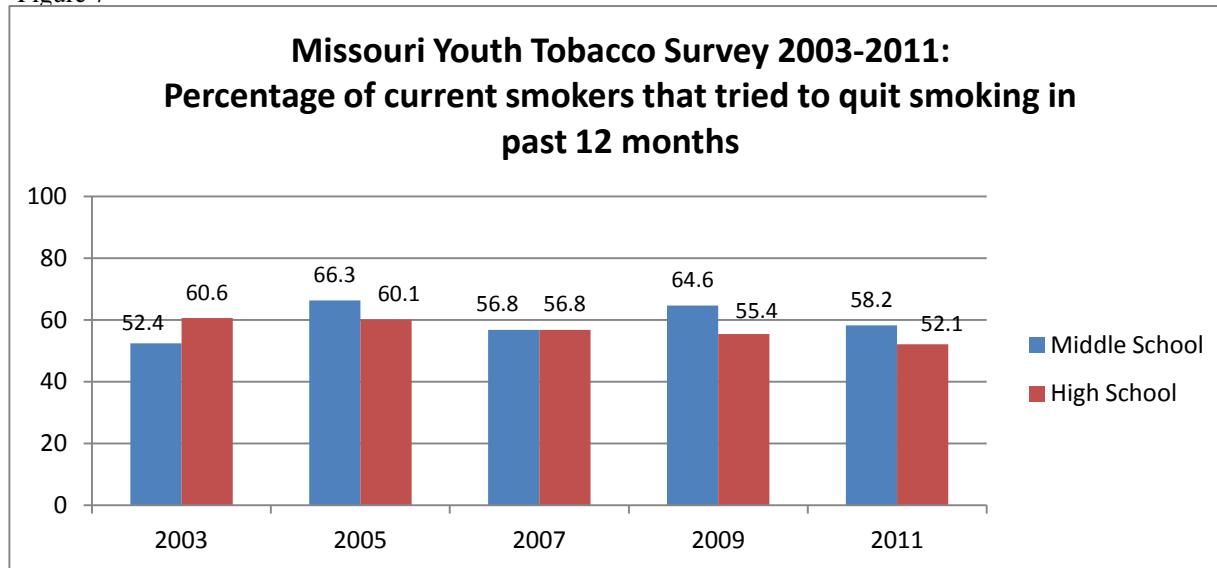
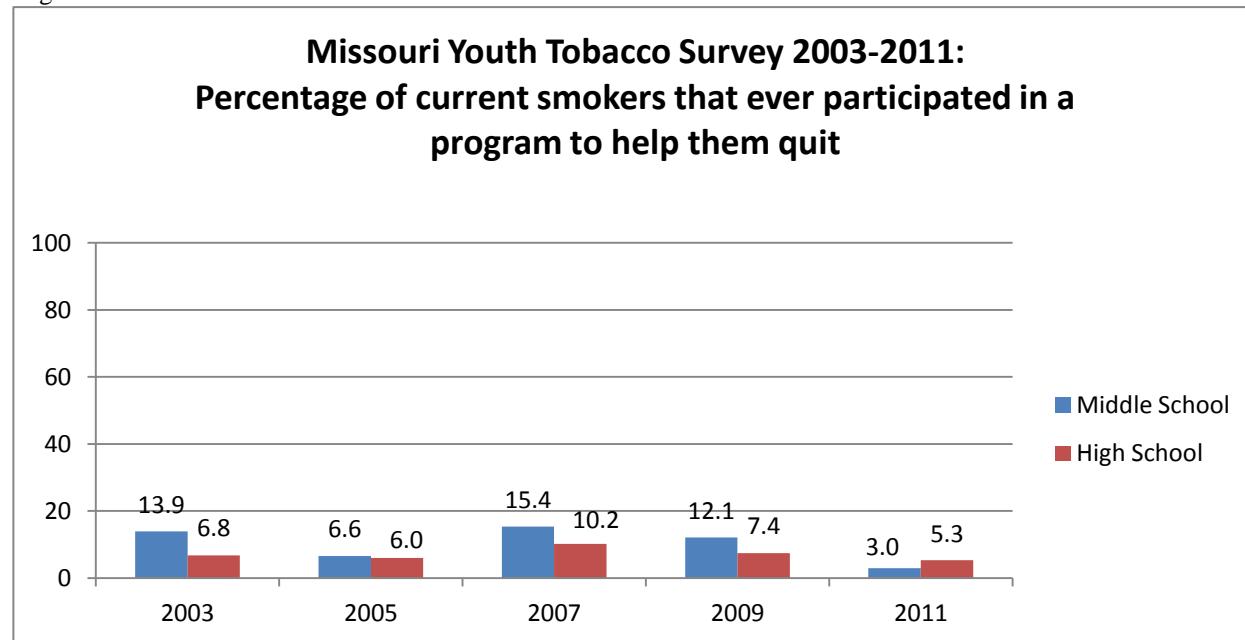


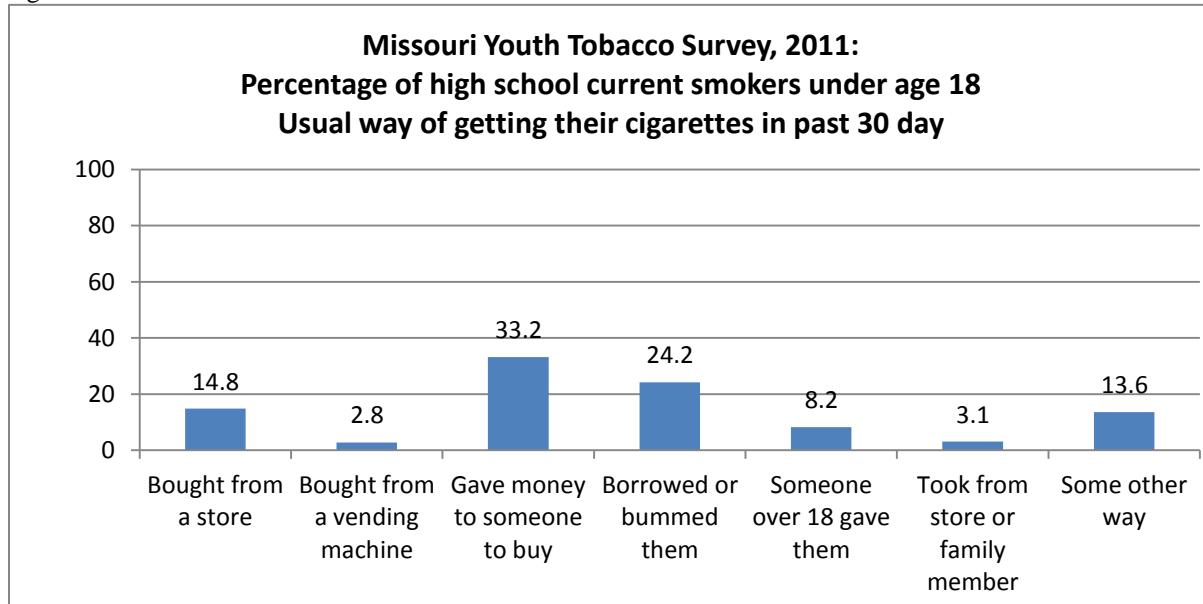
Figure 8



## Youth Access to Cigarettes

The most prevalent way in which high school current smokers obtained their cigarettes in 2011 was to give money to someone else to buy them (Figure 9).

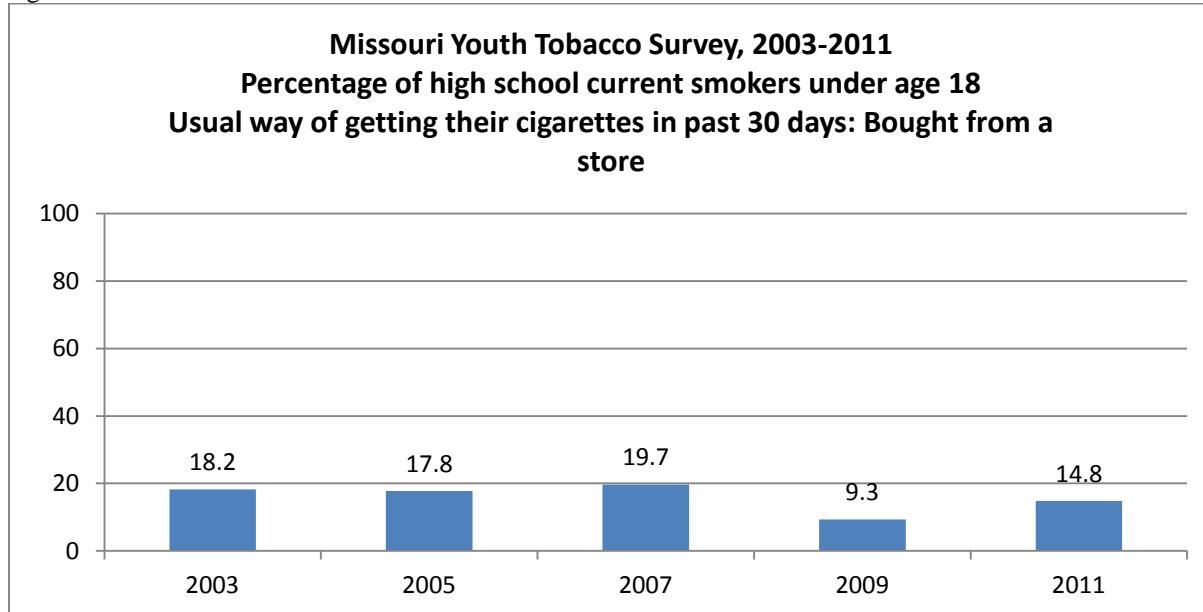
Figure 9



Among those that had bought their cigarettes from a store in 2011, 72 percent were not asked to show proof of age and 65 percent were not refused because of age.

The percentage of high school smokers under the age of 18 whose usual way of obtaining their cigarettes was by buying from a store decreased significantly from 19.7 percent in 2007 to 9.3 percent in 2009, but increased in 2011 to 14.8 (Figure 10).

Figure 10

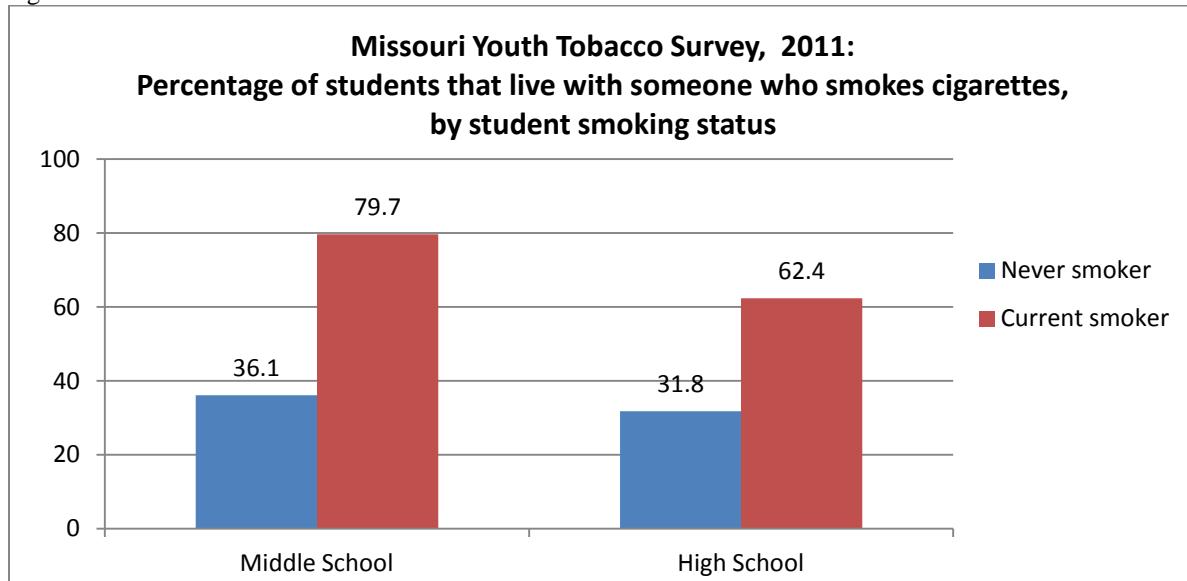


## Influences to Use Tobacco

### Living with Someone that Smokes

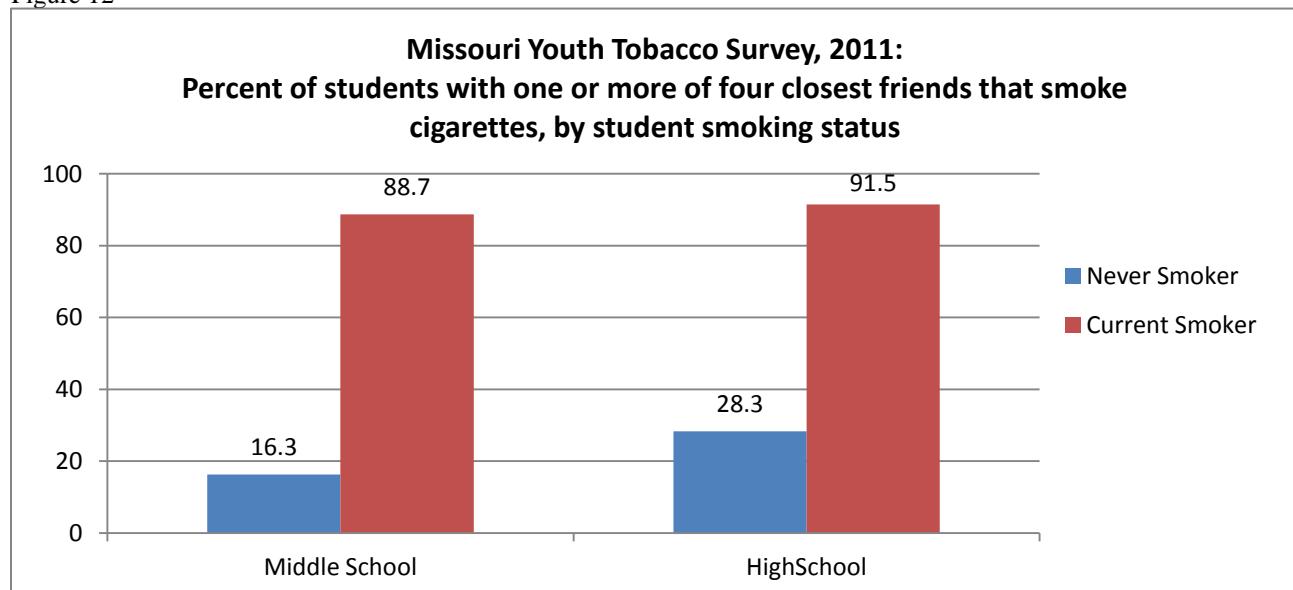
In 2011, significantly more middle and high school students that smoked lived with someone that smoked than did students who had never smoked (Figure 11).

Figure 11



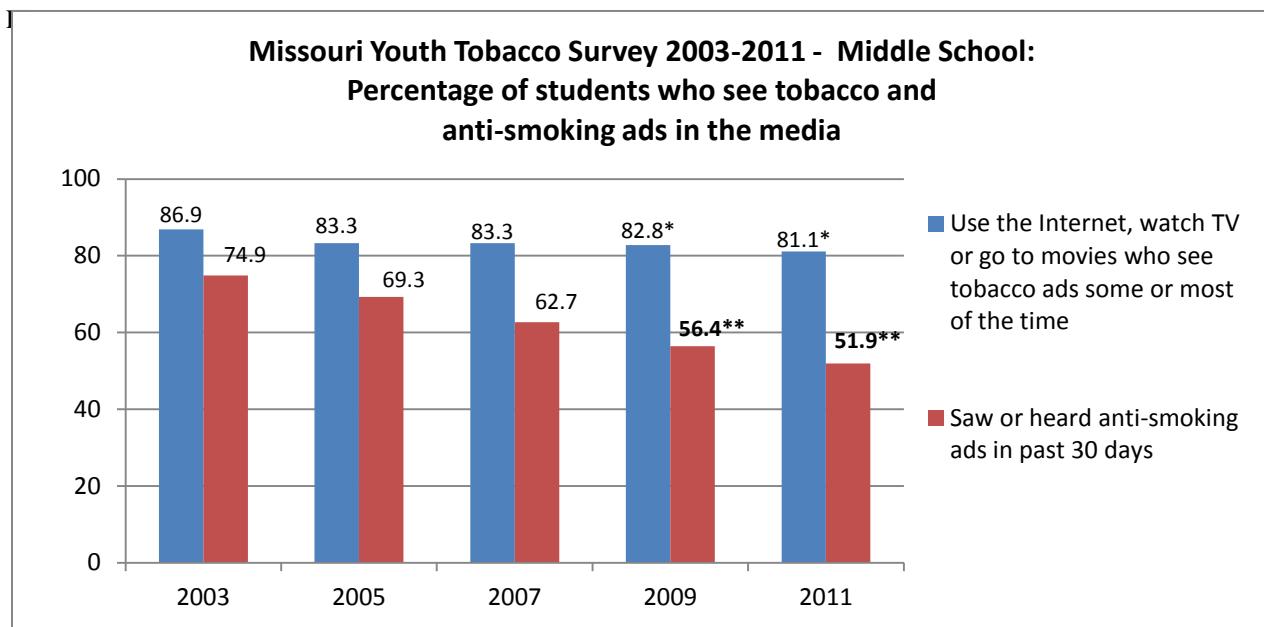
Significantly more middle and high school students that smoked had one or more friends that smoked than did students who had never smoked (Figure 12).

Figure 12



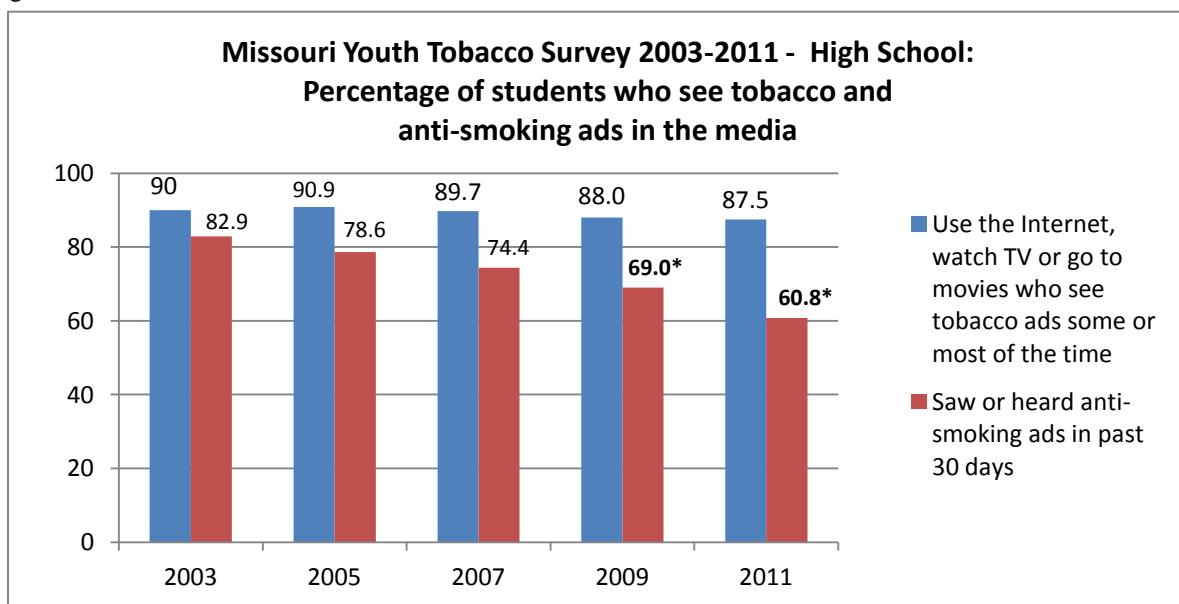
## Media Messages

The percentage of middle school students who saw or heard anti-smoking ads declined significantly from 74.9 percent in 2003 to 51.9 percent in 2011, while the percentage that saw tobacco ads was consistently more than 80 percent during the same period (Figure 13).



The percentage of high school students who saw or heard anti-smoking ads also declined significantly from 82.9 percent in 2003 to 60.8 percent in 2011 (Figure 14). Approximately 90 percent of students saw tobacco ads each year from 2003 to 2011.

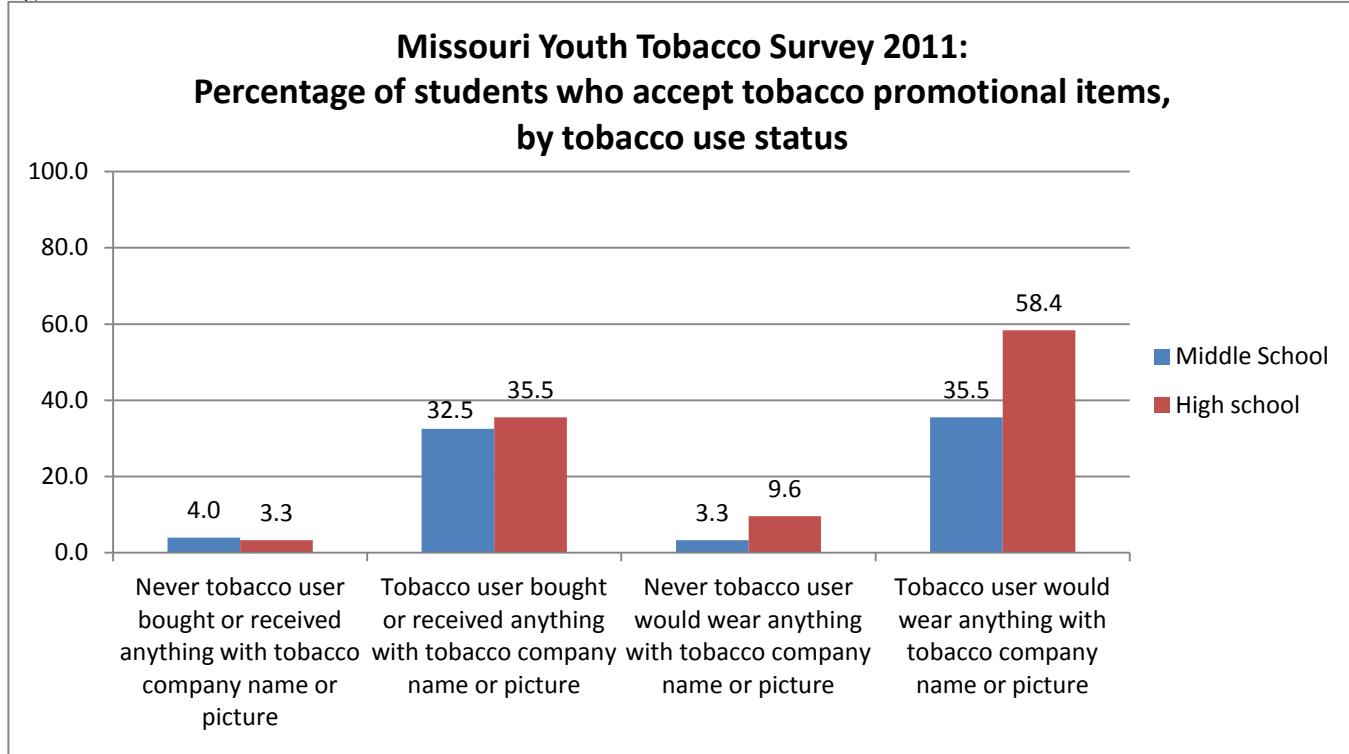
Figure 14



## Tobacco Product Promotion

In 2011, significantly more middle and high school tobacco users had ever bought or received a tobacco promotional item or would wear a promotional item than never tobacco users (Figure 15).

Figure 15



## Education about the dangers of tobacco use

In 2011, the majority of middle and high school students had discussed the dangers of tobacco use with their parents (Table 1).

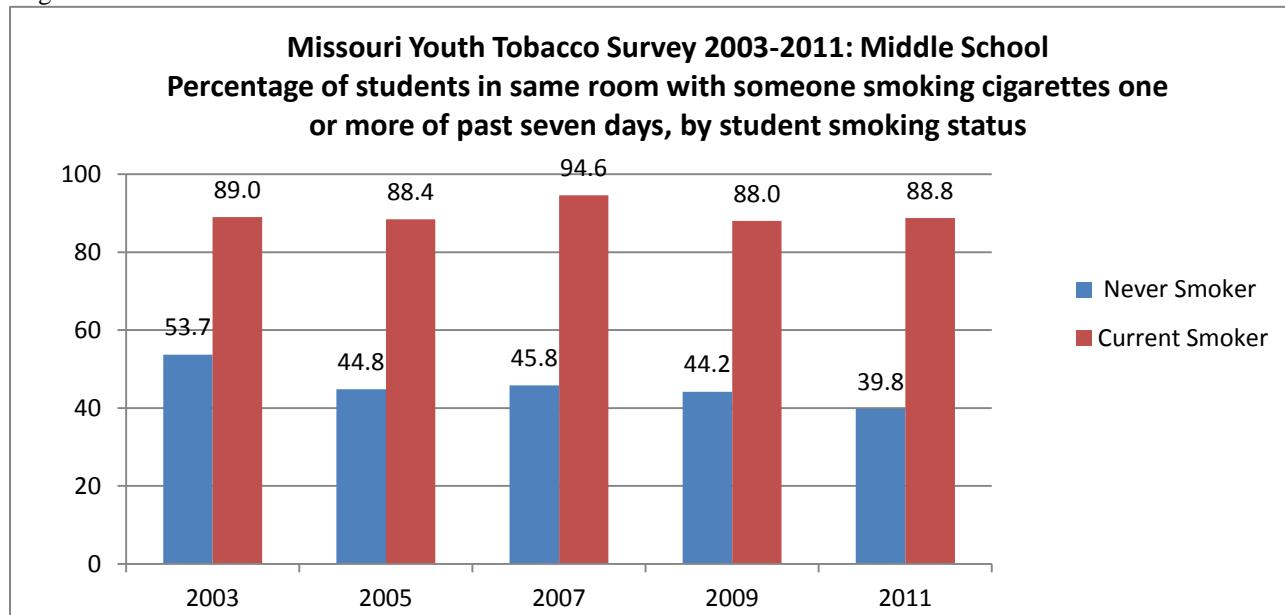
Table 1

Percentage of students that had:	Middle School	High School
Discussed dangers of tobacco use with parent or guardian in past year	66.0	58.0
Been taught about dangers of tobacco use at school this year	65.0	36.6
Practiced ways to say no to tobacco at school this year	43.5	15.5
Participated in any community event discouraging tobacco use in past year	16.7	11.1

## Secondhand smoke exposure and beliefs

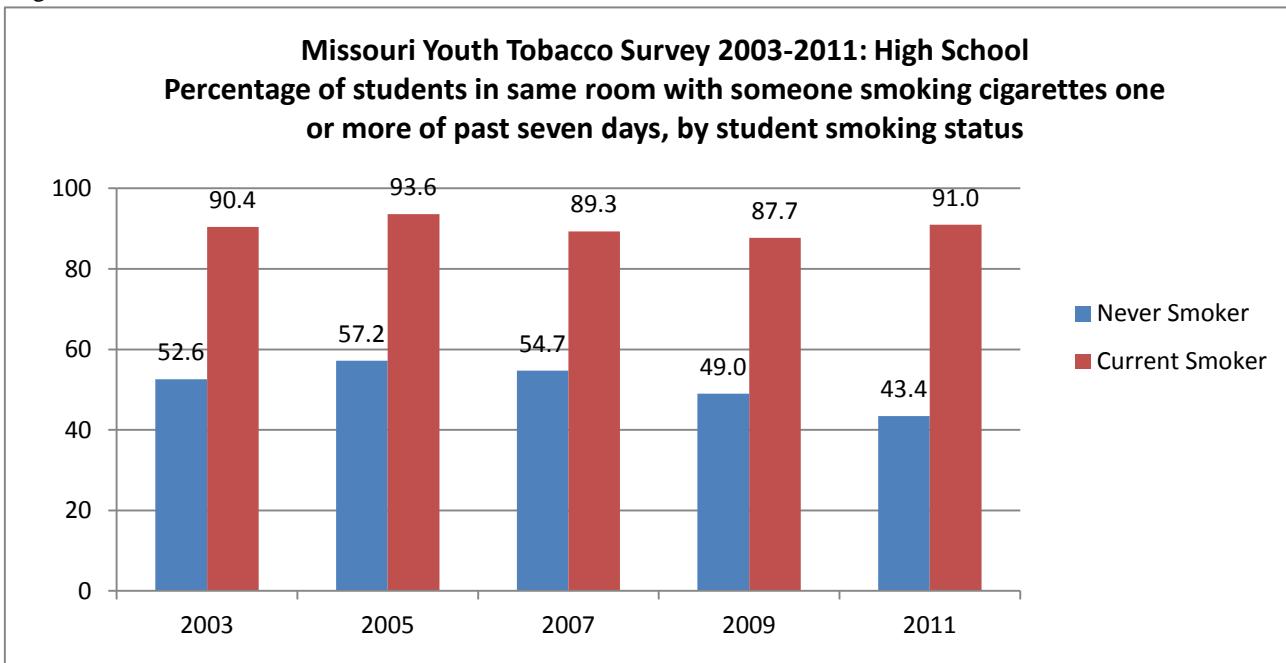
The percentage of middle school never smokers that were exposed to secondhand smoke declined significantly from 53.7 percent in 2003 to 39.8 percent in 2011 (Figure 16).

Figure 16



The percentage of high school never smokers exposed to secondhand smoke also declined significantly from 52.6 percent in 2003 to 43.4 percent in 2011 (Figure 17).

Figure 17



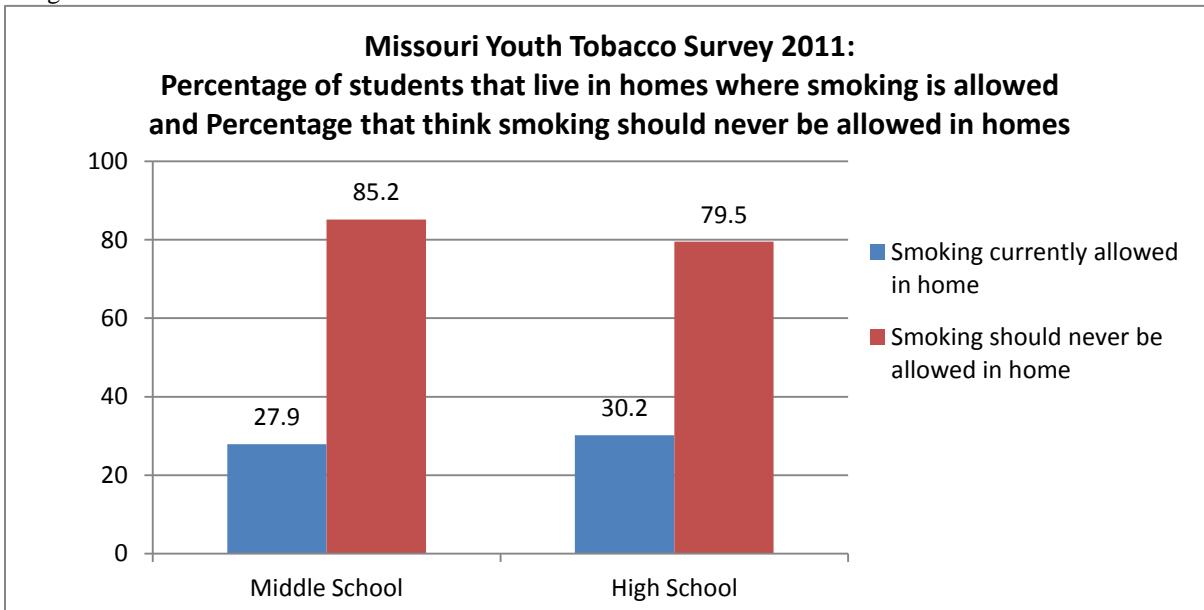
In 2011, more than 90 percent of middle and high school never smokers thought other people's cigarette smoke was harmful to them (Table 2).

Table 2

<b>Percentage of students that think other people's cigarette smoke is definitely or probably harmful to them:</b>		<b>2011</b>
Middle school never smokers		91.5
Middle school current smokers		72.1
High school never smokers		93.0
High school current smokers		85.7

More than a quarter of middle and high school students lived in homes where smoking was allowed in 2011. Eighty percent or more thought smoking should never be allowed in homes (Figure 18).

Figure 18



More than one-quarter of middle and high school never smokers were exposed to cigarette smoke when riding in a car during 2011 (Table 3).

Table 3

<b>Percentage of students that rode in a car with someone smoking cigarettes on one or more of the past 7 days:</b>		<b>2011</b>
Middle school never smokers		30.7
Middle school current smokers		79.5
High school never smokers		25.4
High school current smokers		87.0

## Secondhand smoke in the workplace

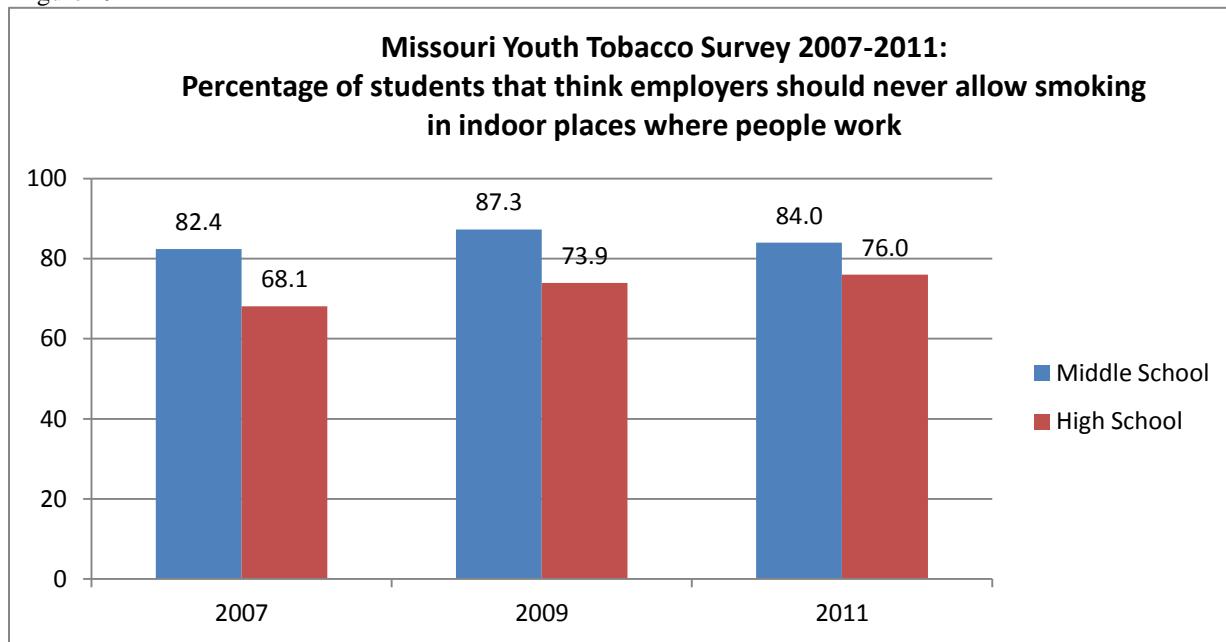
Among high school students that have jobs, the percentage that work in places where smoking is allowed declined significantly from 29.5 percent in 2007 to 19.3 percent in 2011 (Table 4).

Table 4

Among high school students that have a job, percentage that:	2007	2009	2011
Work in places that allow smoking	29.5	23.2	19.3
Were exposed to cigarette smoke at work in past seven days	20.7	14.5	14.1

The percentage of high school students that thought employers should never allow smoking in workplaces increased significantly from 68.1 percent in 2007 to 76.0 percent in 2011 (Figure 19). More than 80 percent of middle school students thought workplaces should be smoke-free each year the question was asked.

Figure 19



## References

<sup>1</sup> CDC. Behavioral Risk Factor Surveillance System 2010. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Available at: <http://apps.nccd.cdc.gov/brfss/list.asp?cat=TU&yr=2010&qkey=4396&state>All>. Accessed November 9, 2011.

<sup>2</sup> Guide to Community Preventive Services. Increasing Tobacco Use Cessation available at: <http://www.thecommunityguide.org/tobacco/cessation/index.html> and Reducing Tobacco Use Initiation available at: <http://www.thecommunityguide.org/tobacco/initiation/index.html> Accessed November 9, 2011.

<sup>3</sup> Campaign for Tobacco-Free Kids. State Cigarette Excise Tax Rates and Rankings Fact Sheet available at: [http://www.tobaccofreekids.org/facts\\_issues/fact\\_sheets/policies/tax/us\\_state\\_local/](http://www.tobaccofreekids.org/facts_issues/fact_sheets/policies/tax/us_state_local/) Accessed November 9, 2011.

<sup>4</sup> Siegel M., Albers AB, Cheng DM, Hamilton WL, Biener L. Local Restaurant Smoking Regulations and the Adolescent Smoking Initiation Process: Results of a Multilevel Contextual Analysis Among Massachusetts Youth. *Archives of Pediatric Adolescent Medicine* 2008; 162(5):477-483.

<sup>5</sup> Missouri Tobacco Control Program data. Obtained November 9, 2011.

<sup>6</sup> Center for Tobacco Policy Research. School Strategy Evaluation Findings 2005-2008. St. Louis: George Warren Brown School of Social Work, Washington University. Available at: <http://ctpr.wustl.edu/reports.php>. Accessed November 9, 2011.

<sup>7</sup> Guide to Community Preventive Services. Reducing Tobacco Use Initiation available at: <http://www.thecommunityguide.org/tobacco/initiation/index.html>. Accessed November 9, 2011.